4. Heads Up

Program Name: HeadsUp.java Input File: headsup.dat

James is writing a game app that involves random binary outcomes of a coin flip. He would like for the outcome of each event in his app to always have a success rate of between 45 and 55 percent, inclusive. An outcome is considered to be a success if the coin lands on heads.

For each event, you will need to construct an object of the type `java.util.Random`. This class allows you to specify the seed for the random number generator. For a given seed, the order of the random numbers is always the same. Then, for each event, you will determine if the given seed and the number of trials for your `Random` object will generate enough heads for the outcome to be considered a success. For this problem assume that 0 stands for heads and 1 stands for tails.

Input

The first line of input will contain a single integer `n` that indicates the number of events to follow. Each of the following `n` lines will contain a `Long`, which is the seed, followed by a space and an integer, which is the number of trials for that event.

Output

For each event, you will print `YES` if the outcome of that event is a success or `NO` if the outcome is not a success.

Note: Truncate the percent before determining if the outcome is a success or not.

Example Input File

```
4
4567433466 100
1234677333 200
1234677333 20
63345678212122 500
```

Example Output to Screen

```
YES
NO
NO
YES
```

Note: these are the random numbers generated for the first three seeds in the input file:

```
4567433466
1 0 0 1 0 0 1 0 1 0 1 0 1 1 1 0 1 1 0 0 0 1 1 1 0 1 0 0 1 0 1 0 0 1 1 0 0 0 0
0 0 1 0 1 1 1 0 1 1 0 0 1 0 0 0 0 0 0 1 1 0 1 0 0 1 0 1 0 1 1 0 1 1 0 0 0 1 0
0 1 0 0 1 0 1 0 0 0 0 0 1 1 0 1 0 1 1 0 1 1
1234677333
1 1 1 1 0 0 0 0 0 1 1 1 1 1 0 1 1 0 1 0 0 0 1 1 1 1 1 1 1 1 1 0 1 0 1 1 1 1
0 0 1 1 1 1 0 0 1 1 1 1 1 1 0 0 1 0 0 0 1 1 1 0 1 0 1 1 0 0 1 0 1 1 1 0 0 0 0
0 1 1 0 1 1 1 1 1 1 0 1 0 0 1 1 1 1 1 1 1 0 1 0 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0
1 1 0 0 1 0 1 0 1 1 0 0 1 0 1 0 1 1 1 1 0 0 0 0 0 0 1 1 0 1 0 1 1 1 0 1 1 1 0
1 1 0 1 0 0 0 0 0 1 1 1 1 0 0 1 0 1 0 1 1 1 1 0 1 1 1 0 0 1 1 1 1 1 1 1 1 1 0
1 1 0 0 1
1234677333
1 1 1 1 0 0 0 0 0 1 1 1 1 1 0 1 1 0 1 0
```